

In the Claims

1 1. [Currently Amended] A system for processing boundary
2 information of a graphical object, comprising:

3 code for receiving a graphical image that comprises said graphical object ,
4 wherein said graphical object is defined by at least said boundary information;

5 code for detecting a plurality of ~~contour~~ contours between [[a]] respective
6 pair pairs of points of said graphical image, wherein individual ones of the
7 contours are detected responsive to respective user input of a user; and

8 code for determining a plurality of vertices from said boundary
9 information, wherein respective contours, which are between adjacent vertices
10 of said plurality of vertices detected by said code for detecting, approximate
11 respective edges of said boundary information within a distortion criterion.

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1 2. [Currently Amended] The system of claim 1 further comprising:
2 code for creating an approximated boundary utilizing at least said
3 graphical image, said plurality of vertices, and said code for detecting.

1 3. [Currently Amended] The system of claim 1 wherein said the code
2 for detecting comprises a predetermined function [[is]] operable to calculate
3 gradients associated with said graphical image.

1 4. [Original] The system of claim 3 wherein said code for detecting is
2 operable to determine a shortest path between said pair of points, wherein said
3 shortest path is weighted by said calculated gradients.

1 5. [Original] The system of claim 4 wherein said code for detecting
2 limits its determination of the shortest path to a rectangular area defined in part
3 by a width parameter.

1 6. [Original] The system of claim 3 wherein said calculated gradients
2 are calculated over respective spatial areas of said graphical image limited by a
3 scale parameter.

1 7. [Original] The system of claim 1 wherein said code for detecting
2 implements a Rubberband function in executable instructions.

1 8. [Original] The system of claim 1 wherein said code for determining
2 only analyzes points of said boundary information that are associated with
3 respective edges that are less than a heuristic value.

1 9. [Original] The system of claim 1 wherein said code for determining
2 only analyzes vertex pairs associated with edges of an edge set that is a
3 weighted acyclic graph.

1 10. [Original] The system of claim 1 wherein said code for determining
2 a plurality of vertices only analyzes vertices from a searchable set of vertices.

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1 11. [Original] The system of claim 1 wherein said searchable set of
2 vertices only includes: (a) vertices associated with curvature greater than a first
3 heuristic value and (b) vertices recursively grown by maximizing distances
4 between adjacent vertices subject to the following constraints: (i) said
5 maximizing distances are less than a second heuristic value and (ii) each
6 contours between adjacent vertices detected by said code for detecting
7 approximate respective edges of said boundary information within a distortion
8 criterion.

1 12. [Currently Amended] A method for processing boundary
2 information of a graphical object, comprising:
3 receiving a graphical image that comprises said graph graphical object,
4 wherein said graphical object is defined by at least said boundary information;
5 determining a plurality of vertices from said boundary information,
6 wherein adjacent vertices of said plurality of vertices are associated with
7 respective contours that approximate respective edges of said boundary
8 information within a distortion criterion, wherein said respective contours are
9 detected by analysis of said graphical image by a predetermined function and
10 responsive to different user input for respective individual ones of the contours;

11 and
12 encoding at least said plurality of vertices in a data structure to represent
13 said boundary information.

1 13. [Original] The method of claim 12 wherein said predetermined
2 function is operable to determine a shortest path between adjacent vertices,
3 wherein said shortest path is weighted by gradients calculated from said
4 graphical image.

1 14. [Original] The method of claim 13 wherein said predetermined
2 function is operable to determine said shortest path from only a spatial area
3 defined by at least a width parameter.

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cnt 1 15. [Original] The method of claim 13 wherein said predetermined
2 function is operable to calculate said gradients utilizing a pixel neighborhood
3 defined by a scale parameter.

1 16. [Original] The method of claim 12 wherein said determining
2 comprises identifying a point of said boundary information that is associated
3 with a greatest amount of curvature.

1 17. [Original] The method of claim 12 wherein said determining only
2 analyzes vertex pairs associated with edges that are shorter than a heuristic
3 value.

1 18. [Original] The method of claim 12 wherein said determining only
2 selects vertices from a searchable set of vertices.

1 19. [Original] The method of claim 18 wherein said searchable set of
2 vertices only includes: (a) vertices associated with curvature greater than a first
3 heuristic value and (b) vertices recursively grown by maximizing distances
4 between adjacent vertices subject to the following constraints: (i) said
5 maximizing distances are less than a second heuristic value and (ii) respective

6 contours between adjacent vertices approximate respective edges of said
7 boundary information within a distortion criterion.

1 20. [Original] A method for processing boundary information
2 associated with an object in a graphical image, said method comprising:

3 identifying two vertices in said graphical image;

4 detecting a plurality of contours between said two vertices by
5 determining a respective shortest path between said two vertices, said
6 respective shortest path being weighted by gradient calculations of said
7 graphical image over regions defined at least by a scale parameter, and each
8 contour of said plurality of contours being associated with a respective scale
9 parameter of a plurality of scale parameters; and

10 selecting an optimal scale parameter from said plurality of scale
11 parameters by determining a scale parameter from said plurality of scale
12 parameters that minimizes variance between regions defined by its respective
13 contours.

1 21. [Original] The method of claim 20 wherein said method further
2 comprising:

3 encoding a boundary object utilizing said two vertices and said optimal
4 scale parameter.

1 22. [Original] The method of claim 20 wherein said detecting further
2 comprising:

3 incrementally detecting a contour of said plurality of contours by utilizing
4 a threshold value, wherein said shortest path is determined by a graph searching
5 process that limits searching of paths to distances less than said threshold
6 value.

1 23. [Currently Amended] The method of claim 20 wherein said
2 detecting a plurality of contours is operable to only select contours within a
3 rectangular area defined by a width ~~parameters~~ parameter and said two vertices.

1 24. [Currently Amended] The method of claim 23 wherein said width
2 ~~parameters~~ parameter and said two vertices are selected by a user interface.

1 25. [New] The system of claim 1 wherein the user input is different
2 for individual ones of the contours.

1 26. [New] The system of claim 1 wherein the user input selects an
2 area of the graphical image wherein searching for the contours is performed.

1 27. [New] The system of claim 26 wherein the graphical image has an
2 associated area, and the selected area comprises an area less than an entirety of
3 the area of the graphical image.

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1 28. [New] The system of claim 26 wherein the user input selects, for
2 individual ones of the contours, at least one of the respective vertices and a
3 width of the area.

1 29. [New] The method of claim 12 wherein the user input is different
2 for individual ones of the contours.

1 30. [New] The method of claim 12 wherein the predetermined
2 function comprises a Rubberband function.

1 31. [New] The method of claim 20 wherein the detected contours
2 approximate respective edges of the boundary information.

1 32. [New] The method of claim 31 wherein the edges of the boundary
2 information exist before the detecting.

1 33. [New] A computer comprising:
2 a display configured to depict a graphical image comprising a graphical
3 object;
4 a user interface configured to receive user input; and
5 processing circuitry coupled with the display and configured to determine
6 a plurality of vertices using boundary information of the graphical object, and to
7 detect a plurality of contours between respective pairs of the vertices responsive
8 to respective user input received via the user interface, wherein the contours
9 approximate respective edges of the boundary information of the graphical
10 object within a distortion criterion.

1 34. [New] The computer of claim 33 wherein the user input is
2 different for individual ones of the contours.
